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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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08/22/2001

John F. Turpin

7181 US

8705

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7590

01/12/2004

TEKTRONIX, INC.

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EXAMINER

HAVAN, THU THAO

ART UNIT

PAPER NUMBER

2672

DATE MAILED: 01/12/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,531

Applicant(s)

TURPIN ET AL.

Examiner

Thu-Thao Havan

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/03/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-9 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claims 1-9 are pending in the present application.

Applicant's arguments filed November 3, 2003 have been fully considered but they are not persuasive. As addressed below, Smith and Thong teach the claimed limitations.

Smith teaches a one's density for the data in the respective data channels during the respective time periods (col. 1, line 45 to col. 2, line 21). Smith discloses one's density when he teaches the color spectrogram display shows a number of spectra which were generated over time as a series of colored lines. Color is used as a substitute for a third dimension, permitting numerous frequency spectra to be compressed into a small area and readily compared by the user. Each single line of the spectrogram display is a complete spectrum, with different frequencies being represented by different points along the line and the color of each point representing the amplitude of the signal at that frequency. The other axis represents time, with the individual complete spectra moving along this axis as successive spectra are calculated by the spectrum analyzer. Thus, in a dynamic mode of operation, as a new spectrum appears at one end of this display, all of the previously displayed spectra are moved up one line along the time axis, with the spectrum which represents the oldest data disappearing from the other end of the display (after the display is filled). In a static mode of operation, this flow of spectra is stopped for detailed analysis, or a series of spectra previously generated are recalled from memory and displayed for further

analysis. Furthermore, Smith discloses identifying particular points on a quasi-3-dimensional display, such as a color spectrogram display or a waterfall display of multiple frequency spectra on an electronic spectrum analyzer, so that the amplitude, time, and frequency values associated with a particular point can be conveniently read out, and so that differences in amplitude, time, and frequency between two points can be easily calculated and presented to the user. Two markers whose positions are ascertainable are generated on the quasi-3-dimensional display and are made subject to operator control. One of these markers is positioned by the operator on a particular point of interest and the values associated with that location are then displayed for readout with greater precision and convenience than would otherwise be possible. A second marker is placed at a second point of interest and the differences in the values of amplitude, time, and frequency between the two points are calculated and displayed. Thus, Smith discloses a one's density for the data by disclosing a particular point can be conveniently read out, and so that differences in amplitude, time, and frequency between two points can be easily calculated and presented to the user.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim **1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US patent 4,870,348) in view of Thong (US patent 5,241,302).

Re claim **1**, Smith discloses an activity display for multiple data channels of a communication link over a period of time comprising a quasi-three-dimensional graphics display having time periods as a first axis, data channels as a second axis orthogonal to the first axis (col. 1, lines 45-66; col. 3, lines 45-58; col. 4, lines 16-39; figs. 1-4); in other words, Smith teaches the activity of the electronic signals displaying on a quasi-3-dimensional display. The electronic signals displaying corresponds to multiple data channels of a communication link. Figures 2-4 graphically depict a color spectrogram with a number of spectra are aligned along a vertical time axis while the frequencies are shown on the horizontal frequency axis;

and data channels corresponding to a one's density for the data in the respective data channels during the respective time periods (col. 1, line 45 to col. 2, line 21). In other words, Smith discloses the spectrum analyzer visually compares certain band of frequencies to identity changes in the signal that are occurring over long periods of time. The spectrum analyzer has two types of quasi-3-dimensional displays such as the waterfall displays and color spectrogram displays. The color spectrogram displays a number of spectra which were generated over time as a series of colored lines. The variations in the colored lines disclose the density for the data of color in relation to the time periods.

However, Smith fails to disclose a shade within each rectangle defined by the time periods as claimed. On the other hand, Thong teaches a three-dimensional

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graphic having a shade within each rectangle defined by the time periods (col. 1, lines 53-64; col. 3, lines 8-43; fig.4). In other words, Thong teaches a graph in a histogram format with each bin of the histogram represents a frequency range and the height of a rectangle within a bin represents the number of sampling intervals in which the average frequency of the signal falls within the range. In figure 4 of Thong, he discloses a scale indicates the frequency range for each color. The different color defines the different shade of the frequency. The ranges consisting of a time period in the horizontal axis while the vertical axis represents the amplitude. Thus, it would have been obvious for one of ordinary skill in the art to combine a shade within each rectangle defined by the time periods of Thong to the system of Smith because it would have enabled displaying characteristics of signals where minimum amplitude of the signal during an interval is graphed versus time (Thong: col. 1, lines 53-64; col.2, lines 28-45; col. 3, lines 8-43; fig.4).

Re claim 2, Thong teaches shade is selected from a range of grey scale values (col. 3, lines 8-43). In other words, Thong discloses each range discloses a grey scale or color value. The range is shaded with a particular color base on the determined color value.

Re claim 3, Thong teaches shade is selected from a plurality of color values (col. 3, lines 8-43). In other words, Thong teaches a plurality of color values by the color of the box indicates the frequency range for the color.

Allowable Subject Matter

Claims **4-9** are allowed.

The following is an examiner's statement of reasons for allowance: Gee and Suzuki fail to teach capturing a line of data from the communication link, the line of data having one or more frames of data corresponding to a predetermined time period, each frame of data having data for the multiple data channels, processing each frame of the line of data in sequence to determine a ones density value for the data of each data channel during the predetermined time periods. Furthermore, they both fail to teach or suggest each frame in sequence of the line of data extracting data for the data channel of a current frame corresponding to a timeslot counter value, matching the extracted data against known data patterns, setting a pattern match indicator for the data channel according to whether a match is found with the known data patterns, if no match is found recalculating the ones density based on the current frame and prior frames of the captured line of data, and repeating the extracting, checking, setting, and recalculating steps for each data channel of the current frame, in combination with the other elements of the claims, was not disclosed by, would not have been obvious over, nor would have been fairly suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu-Thao Havan whose telephone number is (703) 308-7062. The examiner can normally be reached on Monday to Thursday from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

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(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Thu-Thao Havan
December 29, 2003

A handwritten signature in black ink, appearing to read 'M. Razavi', with a long horizontal stroke extending to the right.

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600